

WHAT IS CLAIMED IS:

1. A double stranded oligonucleotide sequence comprising a response element, wherein said response element comprises two half site sequences of 8 bp which are configured as an everted repeat (ER) separated by 6 bp and in which the last 6 bp of said half site sequences share homology with the core hexamer motif classifying nuclear receptor target sites (NBRE), and wherein said response element binds to nuclear receptors.
2. The oligonucleotide sequence of claim 1, wherein the response element binds a dimer of nuclear receptors.
3. The oligonucleotide sequence of claim 2, wherein the dimer is a homodimer comprised of a member of the Nur family of nuclear receptors.
4. The oligonucleotide sequence of claim 3, wherein the dimer is a heterodimer, wherein one partner of the heterodimer is a member of the Nur family of nuclear receptors.
5. A double stranded oligonucleotide sequence comprising a response element, wherein said response element comprises two half site sequences of 8 bp configured as an everted repeat (ER) separated by 6 bp, by comparison with the core hexamer motif classifying nuclear receptor target sites, wherein said half site sequences are selected from the group consisting of AAATATCA, AAATGCCA, AAAGGTCA, and AAAGGTCA, complements, or functional derivatives thereof, and wherein the response element binds to nuclear receptors.

6. The oligonucleotide sequence of claim 5, wherein the response element is selected from the group consisting of :

GTGATATTTXXXXXAAATGCCAG, TGATATTTXXXXXAAATGCCA,  
GTGATATTTXXXXXAAATATCAC, TGATATTTXXXXXAAATATCA,  
5 CTGGCATTXXXXXAAATGCCAG, TGGCATTXXXXXAAATGCCA,  
QTGACCTTTXXXXXAAAGGTCAQ, TGACCTTTXXXXXAAAGGTCA,  
QTGUYATTTXXXXXAAATUYCAQ, TGUYATTTXXXXXAAATUYCA,  
GTGATATTTACCTCCAAATGCCAG, TGATATTTACCTCCAAATGCCA,  
GTGATATTTACCTCCAAATATCAC, TGATATTTACCTCCAAATATCA,  
10 CTGGCATTACCTCCAAATGCCAG, TGGCATTACCTCCAAATGCCA,  
QTGACCTTTACCTCCAAAGGTCAQ, TGACCTTTACCTCCAAAGGTCA,  
QTGUYATTTACCTCCAAATUYCAQ, TGUYATTTACCTCCAAATUYCA,  
complements and functional derivatives thereof, wherein X is independently  
selected from A, T, C, or G, U is a purine, Y is a pyrimidine, and Q is C or G.

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7. A DNA construct comprising the oligonucleotide sequence of claim 1 operably linked to a promoter, which promoter is operably linked to a heterologous gene, wherein the DNA construct is linked in such a manner that the gene is under the transcriptional control of the  
20 oligonucleotide sequence and promoter.

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8. The DNA construct according to claim 7, wherein the oligonucleotide sequence comprises a multimer of at least one response element.

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9. The DNA construct of claim 7, wherein the heterologous gene is a reporter gene.

10. A host cell transfected with the DNA of claim 7.

11. A host cell transfected with the DNA of claim 9.

5           12. A method for controlled expression of a heterologous gene of interest comprising culturing a host cell according to claim 10 in the presence of appropriate regulatory proteins.

10           13. The method according to claim 12, wherein the regulatory protein comprises a member of the Nur family of nuclear receptors.

15           14. A method for detecting a modulator of transcription at a Nur-RE, comprising contacting a sample with the host cell according to claim 11, and comparing the level of expression of the reporter gene in the presence of the sample and in the absence thereof.

20           15. A method for measuring the ability of a compound to modulate transcription at a Nur-RE comprising:  
a) contacting the compound with the host cell according to claim 10 or 11, under conditions conducive to the expression of the heterologous gene in response to the compound; and  
b) comparing the level of gene expression in step a) with the level of gene expression from the host cell in the absence of the compound.  
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16. The method of claim 15 to identify a ligand selective for Nur family transcriptional complexes.

17. A multimeric complex comprising at least one member of the Nur family of nuclear receptors.

5 18. The multimeric complex of claim 17, wherein said multimeric complex is a homodimer.

10 19. The multimeric complex of claim 17, wherein said multimeric complex is a heterodimer, wherein at least one member of said heterodimer is a member of the Nur family of nuclear receptors.

15 20. A multimeric complex comprising at least one member of the Nur family of nuclear receptors, wherein said complex specifically interacts with the oligonucleotide sequence of claim 1, under physiologically relevant conditions.

20 21. A method for treating a host suffering from a disease or condition characterized by an involvement therein of a gene being transcribed in a Nur-RE-dependent fashion, comprising the step of administering to said host a composition comprising an effective amount of a compound which affects multimerization of a complex comprising at least one member of the Nur family of nuclear receptors and/or which affects interaction of a member of a Nur family of nuclear receptors with said Nur-RE.

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